CLAIMS:

1. A method for forming a silicide film of a semiconductor device comprising:

forming a conductive pattern whose surface includes silicon on a substrate:

forming a conduction region whose surface includes silicon in the substrate;

performing a radio frequency etching process ex-situ that removes impurities from the conductive pattern and the conduction region on the substrate and that uniformly planarizes a surface of the conduction region;

performing a cleaning process that removes residues generated during the radio frequency etching process from the conductive pattern and the conduction region;

forming a metal film on the conductive pattern and the conduction region; and

forming a silicide film on the conductive pattern and the conduction region by reacting a metal of the metal film and silicon in the conductive pattern and the conduction region.

2. The method of claim 1, wherein performing a radio frequency etching process comprises performing the radio frequency etching process with a low voltage of below about –100V that provides the silicon with a uniformly amorphous phase.

3. The method of claim 1, wherein performing a radio frequency etching process comprises performing the radio frequency etching process under an argon gas atmosphere that minimizes a re-etching of the silicon.

4. The method of claim 1, wherein performing a cleaning process comprises performing the cleaning process using a composition including hydrofluoric acid and ammonia to remove a native oxide film and sputtered silicon.

5. The method of claim 1, further comprising removing a native oxide film using a solution including hydrogen fluoric acid before performing the radio frequency etching process.

6. The method of claim 1, wherein the conduction region corresponds to an active region of the semiconductor device.

7. The method of claim 1, wherein the metal film comprises a material selected from the group consisting of cobalt (Co), tungsten (W), and nickel (Ni).

8. The method of claim 1, further comprising forming a silicidation blocking layer on the conductive pattern and the conduction region.

9. The method of claim 1, further comprising forming an oxidation blocking layer on the metal film.

10. The method for of claim 9, wherein forming an oxidation blocking layer on the metal film comprises forming a titanium nitride (TiN) layer on the metal film.

11. The method of claim 1, wherein forming a silicide film on the conductive pattern and the conduction region comprises forming the silicide film on the conductive pattern and the conduction region using two heat treatments.

12. The method of claim 1, further comprising:

reacting the metal with the silicon: and

removing the metal that does not react with the silicon.

13. The method of claim 12, wherein removing the metal that does not react with the silicon comprises removing the metal that does not react with the silicon using a composition including hydrogen peroxide and sulfuric acid.

14. A method for forming a semiconductor device comprising:

defining an active region and a field region in a semiconductor substrate;

forming gate electrodes in the active and field regions;

forming source/drain regions between the gate electrodes in the active region using an ion implantation process;

forming spacers on sidewalls of the gate electrodes;

performing a radio frequency etching process ex-situ on a resultant structure on the substrate that provides silicon in the source/drain regions having a uniformly amorphous phase;

performing a cleaning process that removes residues generated during the radio frequency etching process;

forming a metal film and an oxidation blocking film on the resultant structure;

forming a silicide film on the resultant structure by using a primary heat treatment on the metal of the metal film and the silicon of the resultant structure;

removing un-reacted metal and the oxidation blocking film; and

reducing a resistance of the silicide film and stabilizing the silicide film by using a secondary heat treatment on the silicide film.